

## Gene Regulation Activities

### Part 1: Prokaryote Gene Regulation

a. For each pair/group of terms, explain the relationship between them.

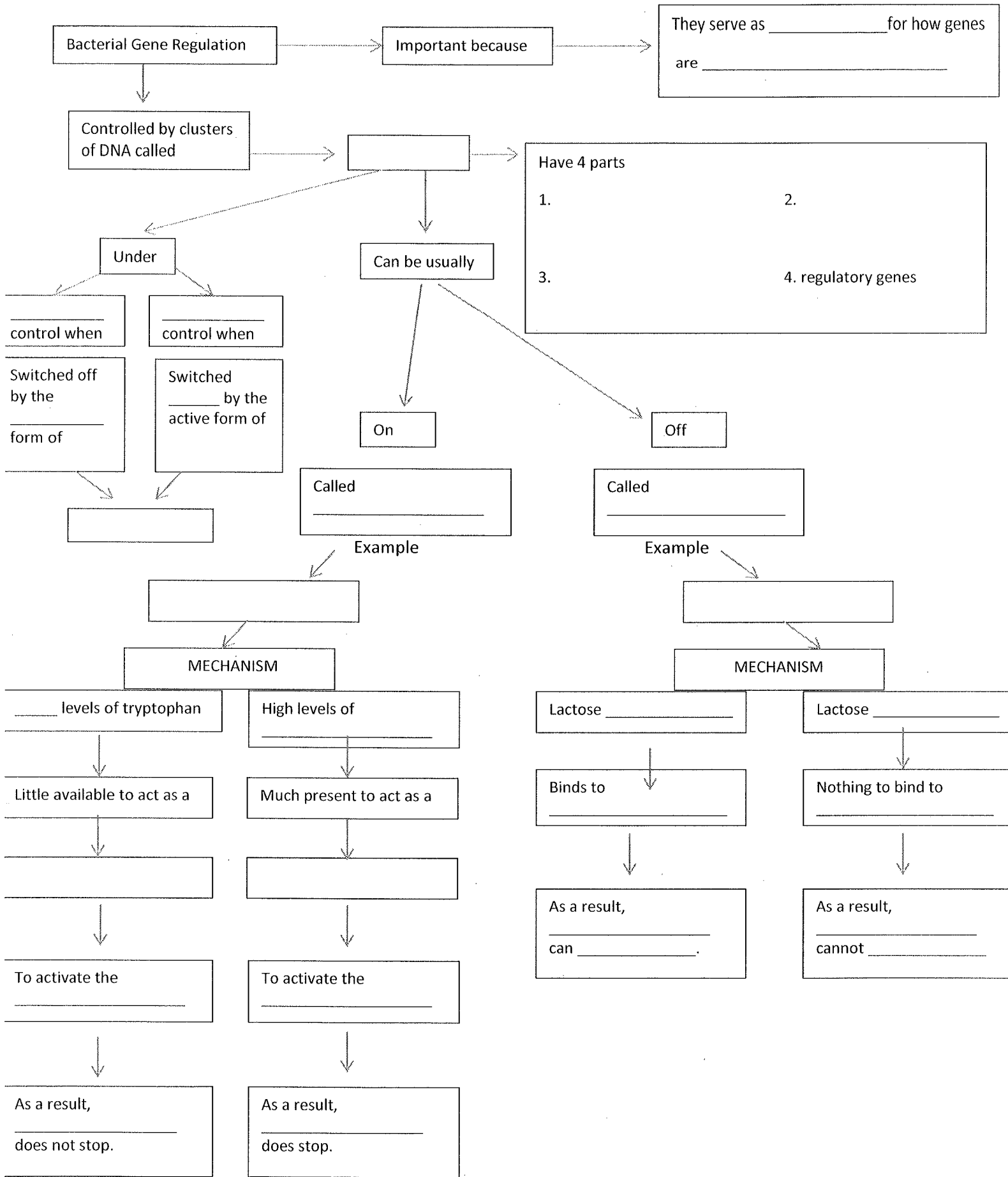
1. Operator & Operon
2. Repressor & Co-repressor
3. Repressible & Inducible
4. Negative regulation & Positive regulation
5. CAP & cAMP

b. Complete the flow chart

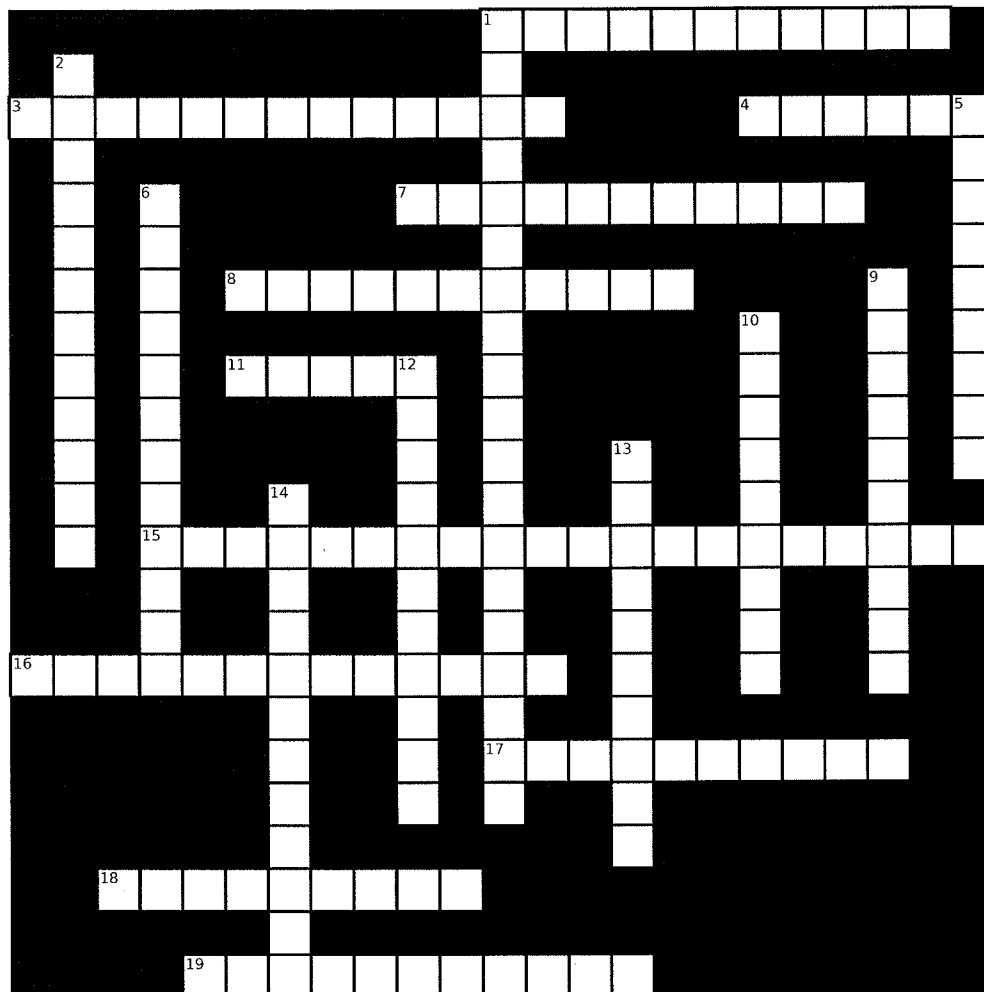
### Part 2: Eukaryote Gene Regulation

a. Review notes 25-51 & use to complete the crossword puzzle.

b. Use text/notes to complete the diagram review



# Eukaryote Gene Expression

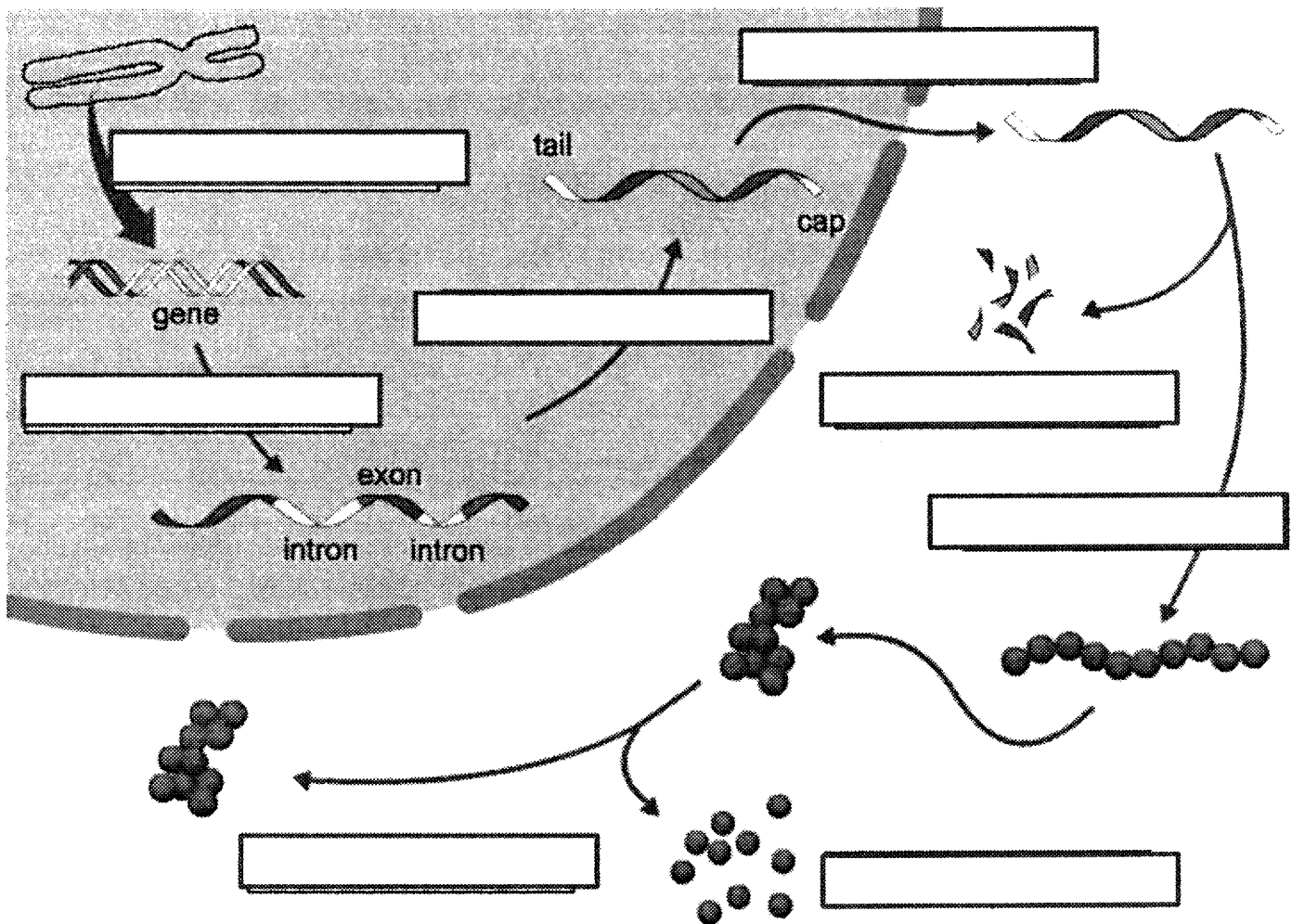


## Across

- 1 Large protein clusters that degrade proteins
- 3 This enzyme requires transcription factors to function
- 4 The goal of adding acetyl groups is to \_\_\_ chromatin
- 7 DNA \_\_\_ causes chromatin to condense
- 8 Protein processing and \_\_\_ is a final point of gene expression regulation
- 11 \_\_\_ degrade or block translation of mRNA
- 15 Loops of chromatin congregate in a \_\_\_ allowing each chromosome's to gene to be transcribed
- 16 \_\_\_ is the second point of gene expression regulation
- 17 \_\_\_ bind to enhancers to stimulate transcription
- 18 \_\_\_ are control elements found upstream of the promoter
- 19 In histone \_\_\_, acetyl groups attach to histone proteins

## Down

- 1 Regulatory mechanisms occurring after transcription
- 2 \_\_\_ regions influence the lifespan of mRNA
- 5 Control elements are sections of \_\_\_ DNA used as binding sites for transcription factors.
- 6 DNA methylation leads to \_\_\_ of genes
- 9 mRNA that is more long-lived
- 10 \_\_\_ modification is the first point of gene expression regulation
- 12 Splicing RNA \_\_\_ cuts and pastes the same RNA transcript differently
- 13 RNA \_\_\_ is the third point of gene expression regulation
- 14 RNA \_\_\_ is the inhibition of expression by RNA molecules



Match the correct term with its proper location.

Activation of protein

Unpacking of DNA

Breakdown of mRNA

Transcription of gene

Processing of RNA

Translation of mRNA

Breakdown of Protein

Export of mRNA